

**What is Claimed:**

1. A data storage manager operational in a data storage subsystem that uses a plurality of data storage elements to store data thereon for a plurality of host processors that are connected to said data storage subsystem, comprising:

means for storing a set of logical data storage device definitions that are created from said plurality of data storage elements;

means for identifying a set of data storage characteristics appropriate for a present data object;

means for comparing said identified set of data storage characteristics with said stored set of logical data storage device definitions;

means, responsive to a failure to match said identified set of data storage characteristics with a single one of said stored set of logical data storage device definitions, for creating a new logical device definition using a plurality of said stored set of logical data storage device definitions; and

means for storing said present data object on interconnected ones of said plurality of data storage elements that correspond to said new logical device definition.

2. The data storage manager of claim 1 wherein said means for creating comprises:

means for assigning weighted values to each of the presently defined logical devices to produce a best fit solution to the requested policies in an n-dimensional best fit matching algorithm.

3. The data storage manager of claim 1 wherein said means for creating comprises:

means for implementing the resulting logical device definition by dynamically interconnecting the logical devices that were used as the components of the newly defined logical device to store the data object.

4. The data storage manager of claim 1 wherein said means for storing comprises:

means for allocating space on an existing instance of said interconnected ones of said plurality of data storage elements that correspond to said new logical

device definition.

5. The data storage manager of claim 1 wherein said means for storing comprises:

means for creating a new instance of said interconnected ones of said plurality of data storage elements that correspond to said new logical device definition.

6. The data storage manager of claim 1 wherein said means for storing comprises:

means for storing data indicative of a plurality of data storage attributes from the class of data storage attributes comprising: speed of access to first byte, level of reliability, cost of storage, probability of recall, and expected data transfer rate.

7. A method of operating a data storage manager operational in a data storage subsystem that uses a plurality of data storage elements to store data thereon for a plurality of host processors that are connected to said data storage subsystem, comprising the steps of:

storing a set of logical data storage device definitions that are created from said plurality of data storage elements;

identifying a set of data storage characteristics appropriate for a present data object;

comparing said identified set of data storage characteristics with said stored set of logical data storage device definitions;

creating, in response to a failure to match said identified set of data storage characteristics with a single one of said stored set of logical data storage device definitions, a new logical device definition using a plurality of said stored set of logical data storage device definitions; and

storing said present data object on interconnected ones of said plurality of data storage elements that correspond to said new logical device definition.

8. The method of operating a data storage manager of claim 7 wherein said step of creating comprises:

assigning weighted values to each of the presently defined logical devices to

produce a best fit solution to the requested policies in an n-dimensional best fit matching algorithm.

9. The method of operating a data storage manager of claim 7 wherein said step of creating further comprises:

implementing the resulting logical device definition by dynamically interconnecting the logical devices that were used as the components of the newly defined logical device to store the data object.

10. The method of operating a data storage manager of claim 7 wherein said step of storing comprises:

allocating space on an existing instance of said interconnected ones of said plurality of data storage elements that correspond to said new logical device definition.

11. The method of operating a data storage manager of claim 7 wherein said step of storing further comprises:

creating a new instance of said interconnected ones of said plurality of data storage elements that correspond to said new logical device definition.

12. The method of operating a data storage manager of claim 7 wherein said step of storing comprises:

storing data indicative of a plurality of data storage attributes from the class of data storage attributes comprising: speed of access to first byte, level of reliability, cost of storage, probability of recall, and expected data transfer rate.

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